

We claim:

1. A terminal for use in a communication system including plural terminals separated by a fluid inter-terminal medium, said terminal for receiving laser pulses, which are polarized when transmitted and which have information impressed thereon, said terminal comprising:

a polarization analyzer having a polarization orientation;

a detector operatively connected to said polarization analyzer, said detector detecting portions of the received laser pulses; and

a processor operatively connected to said detector and said polarization analyzer, said processor operatively arranged to determine a polarization state for said polarization analyzer and operatively arranged to change the polarization orientation of said polarization analyzer to said determined polarization state, said processor thereby reducing the broadening of the detected portions of the received laser pulses.

2. The terminal according to claim 1, wherein said processor is operatively arranged to effectuate the varying of said determined polarization state to optimize reducing the broadening of the detected portions of the received laser pulses.

3. The terminal according to claim 2, wherein said varying of said determined polarization proceeds based on comparing a reference value with a characteristic length of a detected portion of a received laser pulse.

4. The terminal according to claim 3, wherein said reference value is the length of a bit in a transmitted laser pulse or is the overall length of a transmitted laser pulse, wherein said characteristic length of a detected portion of a received laser pulse is the length of a bit of a detected portion or is the overall length of a detected portion, and wherein said varying of said determined polarization continues until said reference value is equal to, or is greater than, said characteristic length of a detected portion of a received laser pulse.

5. The terminal according to claim 2, wherein said varying of said determined polarization proceeds based on comparing accumulated detection error and a reference value.
6. The terminal according to claim 1, further comprising:
an input operatively connected to said processor, said input being connectable to an information channel, which channel provides information about the polarization of received laser pulses when transmitted.
7. The terminal according to claim 1, further comprising a laser pulse receiver receiving laser pulses.
8. The terminal according to claim 7, further comprising a laser pulse transmitter outputting a polarized laser pulse.
9. The terminal according to claim 8, wherein the polarization of said outputted laser pulse is linear, circular, or elliptical.
10. The terminal according to claim 9, wherein the polarization of said outputted laser pulse is modulated.
11. A method for using polarized laser pulses in a communication system including plural terminals separated by a fluid inter-terminal medium, said method comprising the steps:
receiving laser pulses, which are polarized when transmitted;
processing information to determine a state of polarization corresponding to the polarization of the received laser pulses when transmitted;
detecting selectively portions of received laser pulses, said portions having a polarization matching said determined state of polarization; and
obtaining a replica of the unbroadened transmitted laser pulses based on the result of said detecting selectively step.

12. The method according to claim 12, wherein said step of detecting selectively includes setting the polarization orientation of a polarization analyzer based on said step of processing information.

13. The method according to claim 12, wherein said step of setting the polarization orientation of a polarization analyzer proceeds based on comparing a reference value with a characteristic length of a detected portion of a received laser pulse

14. The method according to claim 13, wherein said reference value is the length of a bit in a transmitted laser pulse or is the overall length of a transmitted laser pulse, wherein said characteristic length of a detected portion of a received laser pulse is the length of a bit of a detected portion or is the overall length of a detected portion, and wherein said varying of said determined polarization continues until said reference value is equal to, or is greater than, said characteristic length of a detected portion of a received laser pulse.

15. The method according to claim 12, wherein said step of setting the polarization orientation of a polarization analyzer includes obtaining a measure of accumulated error, said step of setting the polarization orientation proceeding based on comparing a reference value and said measure of accumulated error.

16. The method according to claim 12, further comprising the step of optimizing said obtained replica of the unbroadened laser pulses by occasionally varying the polarization orientation of the polarization analyzer.

17. The method according to claim 12, wherein said processing information includes receiving information through a side channel.

18. The method according to claim 12, further comprising the step of transmitting a laser pulse.

19. The method according to claim 12, wherein the polarization of the laser pulse transmitted by said transmitting step is linear, circular, or elliptical.

20. The method according to claim 12, wherein the polarization of the laser pulse transmitted by said transmitting step is modulated.

21. The method according to claim 12, wherein said step of setting the polarization orientation of a polarization analyzer proceeds based on comparing a value corresponding to the power of a received pulse with a reference value.

22. The terminal according to claim 2, wherein said varying of said determined polarization proceeds based on comparing a value corresponding to the power of a received pulse with a reference value.